International Journal of Pharmacy and Technology, 2016, vol.8, N4, pages 24134-24145

The interannual changeability of atmospheric pressure and near-surface air temperature in the extratropical latitudes of the northen hemisphere

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Abstract

© 2016, International Journal of Pharmacy and Technology. All rights reserved.The spatial and temporal changes of atmospheric pressure fields (P) and near-surface air temperature (T) in extratropical latitudes of the Northern Hemisphere (NH) over the period 1900-2014 are considered in the article. For the estimation of reorganization in meteorological values in the latitudinal zone 20-90°N., it were determined the differences fields of atmospheric pressure and near-surface temperature, averaged according to the following time periods: 1900-1929, 1930-1959, 1960-1987, 1988-2000 for the pressure, and 1900-1929, 1930-1959, 1960-1987, 1988-2000 1988-2014 for the temperature. The degree of conformity between the obtained maps of differences was determined using the analogousness criterion ρ. It was found out that the greatest similarity between the differences fields was during the two adjacent periods 1988-2000 and 1988-2014. The long-term run of low-frequency components (LFC) of air temperature and atmospheric pressure at the atmosphere action centers (AAC) in the Volga Federal District was considered in the article. This has allowed to establish their antipodal character, specified by the influence of circulating factors. The climatic maps of air temperature and atmospheric pressure distribution in January and in July in the extratropical latitudes of the Northern Hemisphere (20-90°N) were constructed. The monitoring of air temperature and atmospheric pressure changing, averaged in the latitudinal zone 32,5-67,5°N in January, in July, and for the whole year during the period of 1900-2014 was carried out.

Keywords

Air temperature, Atmosphere action centers, Atmospheric pressure, Differences of the average values, Low-frequency component